

Abstract

An ordinance platform with a variable reluctance electric motor is provided.

The motor has a stator integrated with a bearing race which is fixably connected with the tank body. The bearing race provides the function of a rotor and is fixably or integrally connected with the tank turret. The rotor is vertically supported by the stator for rotational movement by a plurality of ball bearings. The stator is formed having a plurality of individual phase segments which are arranged in an annular array. Each of the stator phase segments is provided with a phase winding and a plurality of stator pole teeth. The stator phase windings are connected individually to respective driver circuits so as to essentially create a plurality of individual stators about the rotor. The rotor race is formed and is provided with a plurality of rotor pole teeth which are disposed adjacent the stator pole teeth. Thus, when the phase windings of the individual stator phase segments are energized, the moveable race (integrated with the rotor and connected with the gun turret) is rotated relative to the stationary race (integrated with a stator and connected with the tank body), without any intermediate coupling device such as gears, belts and the like.

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